

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A negative resistance field-effect device comprising:

- an InAlAs or AlGaAs barrier layer that, owing to being formed on an InP or GaAs substrate having an asymmetrical V-groove whose surface on one side is a (100) plane and surface on the other side is a (011) plane, has a trench, one of whose opposed lateral faces is a (111) A plane and the other of which is a (331) B plane;
- an InGaAs or GaAs quantum wire grown on a trench bottom surface of the barrier layer as a high-mobility channel having a relatively narrow energy band gap;
- an InAlAs or AlGaAs spacer layer grown on the quantum wire as a low-mobility channel having a relatively wide energy band gap;
- a source electrode and a drain electrode each in electrical continuity with the high-mobility channel through a contact layer and extending in a longitudinal direction of the quantum wire as spaced from each other; and
- a gate electrode provided between the source electrode and the drain electrode to face the low-mobility channel through an insulating layer or a Schottky junction.

Claim 2 (Previously Presented): The negative resistance field-effect device according to claim 1, further comprising a delta-doped layer that lowers conduction band energy and is provided locally within the low-mobility channel and wherein the InAlAs or AlGaAs spacer layer constitutes a modulation-doped layer.

Claim 3 (Currently Amended): The negative resistance field-effect device according to claim 1, wherein the contact layer is a laminated structure of an n-type InAlAs layer, an n-type InGaAs layer-(32), an n-type InAlAs layer and an n-type InAs layer.